10/522590

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Translation of the pertinent portion of a response by KBA, mailed 09/29/03

Responsive to the Request for the Removal of Defects in the International Application, mailed 09/16/03

1. The following are being filed

1.1 Drawings
(Replacement sheets 3 to 5, Figs. 3a, 3b, 3c, version F:A)

The three figures on sheet 3 were divided into Figs, 3a, 3b, 3c and are now represented enlarged on separate sheets 3, 4 and 5.

1.2 Preamble of the Specification
(Replacement/added pages 6, 6a and 11, version of 09/29/03)

The preamble of the specification was matched to the new drawings figures as follows:

On page 6, second paragraph, the explanation of Fig. 3 was replaced by explanations of Figs. 3a, 3b and 3c.

On page 11, penultimate paragraph, the reference to Fig. 3 was replaced by references to Figs. 3a, 3b and 3c.

Enclosures:

Specification, replacement/added pages 6, 6a and 11,
Drawings, replacement sheets 3 to 5, version F:A,
each in the version of 09/26/03, in triplicate.

Fig. 2, a sympathetic curve,

Fig. 3a, a difference function of the power of D = 8

Fig. 3b, a difference function of the power of D = 4

Fig. 3c, a difference function of the power of D = 2

A flow diagram of the signal evaluation method to be described in what follows is shown in Fig. 1. With the method for signal evaluation of image contents of a test body, a grid of N x N windows 01 is placed over the entire image to be analyzed. Each window 01 here consists of n x n pixels 02. In the course of the image analysis, the signal from each window 01 is analyzed separately. As a result, the image content 03 of each window 01 can be considered to be local.

The two-dimensional image of the local space is transformed into a two-dimensional image in the frequency space by one or several spectral transformations. The spectrum obtained is called a frequency spectrum. Since this is a discrete spectrum in the present exemplary embodiment, the frequency spectrum is also discrete. The frequency spectrum is constituted by the spectral coefficients 06 - also called spectral values 06 -.

In the next method step the amount formation 07 of the spectral values 06 takes place. The amount of the spectral values 06 is called spectral amplitude value 08. In the present exemplary embodiment, the spectral amplitude values 08 constitute the characteristic values, i.e. they are identical to the characteristic values.

A circular transformation is preferably used for the transformation. With the circular transformation the invariance properties can be adjusted via the transformation

coefficients. It is possible to set a translation invariance, as well as a reflection invariance, or an invariance in respect to different other permutation groups. In this way it is possible to utilize the above mentioned transformation for example in the reflection-variant variation for inspecting characters

$$C_x = (1 + 2\, p_{ce}) \quad \frac{\max(m_x) - \min(m_x)}{2}, \quad a = (1 + 2\, p_{ce})$$

wherein C is the expansion value and P_{ce} is the percental tolerance of C_{diff}.

The value range of a lies between [1 ... 3]. The value P_{ce} indicates the percental tolerance with which C_{diff} is respectively charged. A 50% expansion of the range of C_{diff} is intended to be achieved; in that case a = 1+2*<u>0.5</u> = 2.

The x_o value indicates the mean value of C_{diff}; it is calculated for each characteristic during the running time.

The difference between the characteristic value and the mean characteristic value, which is determined from the value C_x, is calculated. This difference is standardized with the width of the expansion value C_x. The result is that with a slight deviation the corresponding characteristic contributes little to the z-value; however, with a large deviation a large deviation value will result as a function of the difference measure of the expansion value C_{diff}. The standardized difference is called d_x.

The power D (2, 4, 8) sets the sensitivity at the flanks of the standardized difference function d_x. If the value D is set to "infinity" - which is not technically possible - an infinite flank steepness is also obtained, and therefore a hard good/bad decision. Therefore the values are customarily set to between 2 ... 20. The curves for the values 2, 4 and 8 are represented in Figs. 3c, 3b and 3a.

The exponentiated functions d_x are added up, however, only the number M of the characteristics m which have been switched on is used. Following the adding-up, the calculated value is divided by the number M. The mean value of all

exponentiated differences d_x is determined.

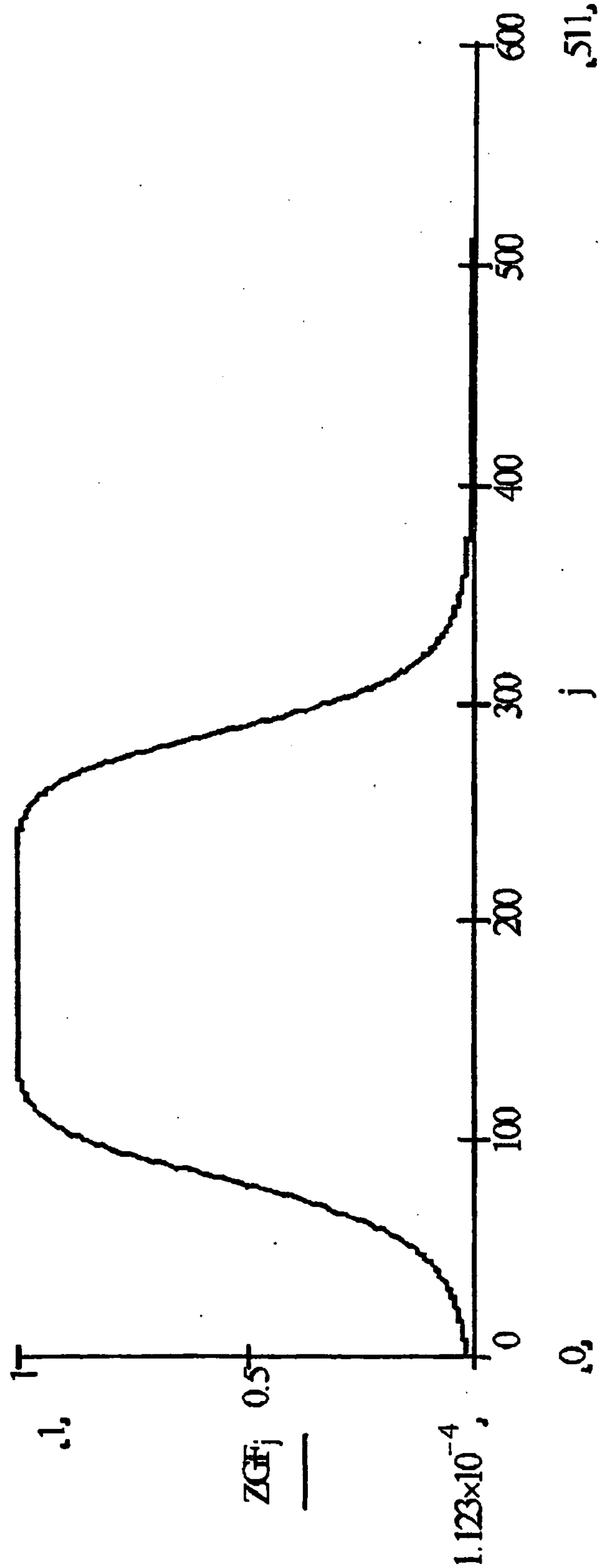

Fig. 3a

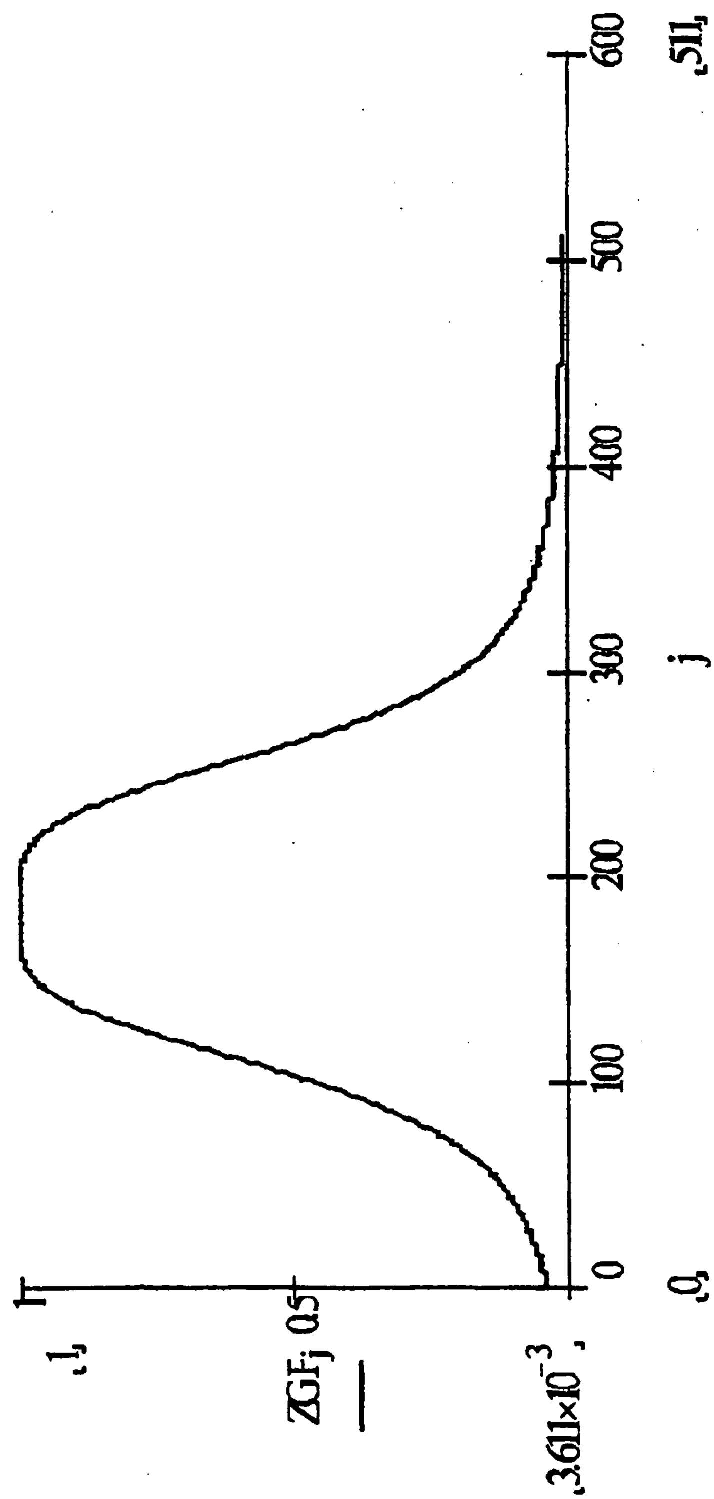

Fig. 3b

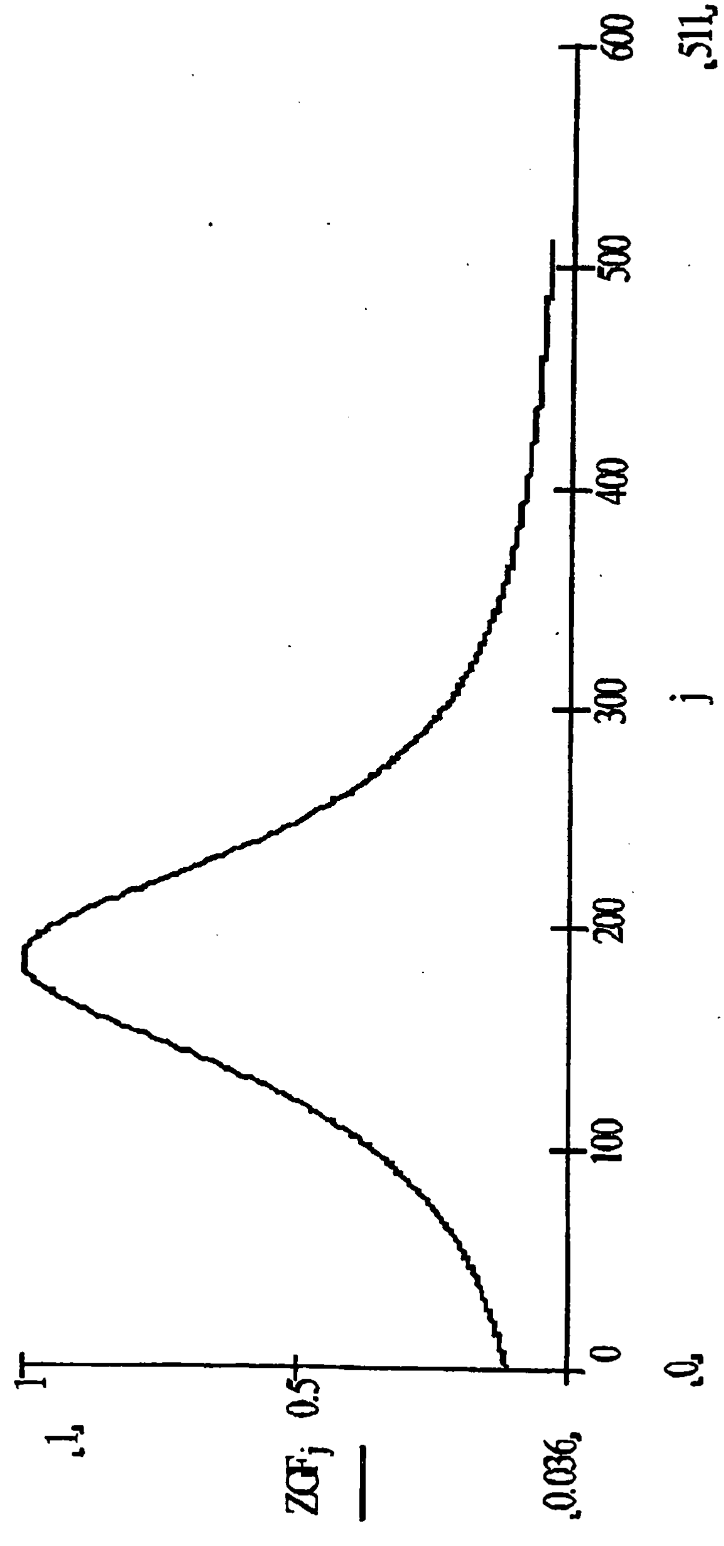

Fig. 3c